US Army Corps
of Engineers®
Engineer Research and
Development Center

Information Technology Laboratory

Guide for Preparing Technical Information Reports of the Engineer Research and Development Center

July 2004
Revised January 2006

Guide for Preparing Technical Information Reports of the Engineer Research and Development Center

Information Technology Laboratory
U.S. Army Engineer Research and Development Center
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Final report

Approved for public release; distribution is unlimited

Supersedes ERDC/ITL SR-00-1

Abstract: This Guide provides information necessary for authors to prepare and produce technical publications for the U.S. Army Engineer Research and Development Center (ERDC). This version of the Guide consolidates processes and procedures used at all ERDC sites. Technical-information guidelines are based on ANSI/NISO Z39.18-2005, and the essential mechanics of professional writing, including language use, punctuation, and reference format, are based on *The Chicago Manual of Style*, 15th edition. The Guide also discusses items of specific relevance to preparing ERDC reports, including publishing workflow and preferred electronic file formats. The presentation formats prescribed by this Guide, such as fonts, point sizes, and page headers, were modified to facilitate Web-based publishing.

Contents

Report Documentation Page

Figures and Tables

Figures

Tables

Preface

This Guide was developed to assist in the preparation of U.S. Army Engineer Research and Development Center (ERDC) reports for publication. It establishes procedures for promoting the uniformity of important elements common to all reports while permitting flexibility in the presentation of the author's subject matter.

The Guide was prepared in accordance with Army Regulations 25-30 and 70-31, and American National Standards Institute Publication Z39.18-2005. It supersedes ERDC/ITL SR-00-1, dated November 2000, and internal publishing guidance documents used at Hanover and Champaign. The ERDC publishing guidelines are implemented by Center Regulation (CR) 25-30-1; the provisions of CR 25-30-1 are mandatory for ERDC in-house and contractor-prepared technical reports.

The Guide was prepared by members of the staff of the Publishing and Technology Transfer Branch (PTTB), Infostructure and Knowledge Management Division (IKMD), Information Technology Laboratory (ITL), ERDC. The efforts of staff members who participated in the preparation of the Guide are gratefully acknowledged. Robert A. Baylot, Jr., was Chief, PTTB, and Alice F. Duke was Chief, IKMD, during preparation of this Guide. Dr. Deborah F. Dent was Deputy Director, ITL, and Dr. Jeffery P. Holland was Director, ITL.

COL James R. Rowan was Commander and Executive Director of ERDC. Dr. James R. Houston was Director.

1 Introduction

Purpose of Engineer Research and Development Center (ERDC) technical publications

ERDC reports are important end products of technical investigations and provide a formal record of data collected, results obtained, and analyses performed. These reports should be well organized and describe the investigation and its results in language readily understood by the intended audience. Reports should clearly communicate the problem being addressed, the work objective and methodology, and what was learned as a result of the investigation.

All ERDC reports are prepared to document the results of Corps of Engineers research and development projects, both for purposes of public accountability and technology transfer. They may be intended either for a wide audience within a community of practice or a relatively narrow audience of technical experts and peers. Some ERDC reports are intended for very small special-interest audiences, and some may be restricted from the public domain and made available only on a need-to-know basis. Every ERDC report, regardless of audience and scope of distribution, should be a self-contained document that accurately and completely describes a research project performed for the benefit of the Army and the citizens of the United States.

Whatever their purpose or intended audience, reports that are carefully organized, written, and produced communicate ERDC's technical expertise to the reader. Therefore, the effort invested in writing, editing, and visually presenting technical publications can be a very positive influence in ERDC's professional and public reputation.

Documenting the results of investigations for publication is the responsibility of authors and their supervisors. Research results should be published promptly. Publishing and Technology Transfer Branch (PTTB) personnel are available to assist with editing, graphics preparation, illustration, photography, design, and preparation of reproduction copy, hypertext markup language (HTML) files, Portable Document Format (PDF) files, or other modes of publishing.

Core principles of content and presentation

When drafting a technical report, the author should keep the following two essential principles in mind:

- The report must contain all essential information needed by the reader, but supplementary supporting information is better to include by reference (including Web links) rather than by direct reproduction or extensive paraphrase.
- All text and visual information presented in the report should be clear and easy to use by readers at the executive, planning, using, and reference worker levels in the target audience.

The first principle is intended to keep reports concise and explicitly on topic. Minimizing the size of reports not only helps the reader, it also reduces preparation time and duplication costs. The required level of detail will vary with report topic and objective. The author generally makes the final decision on amount and level of detail, but a technical editor can make useful suggestions with respect to the intended audience. In general, minimal data summaries and roll-ups are acceptable in final technical report content as long as the author's raw data are available either in appendixes or from the project archives by request.

The second principle recognizes that the typical audience for most technical reports will include people who use the information for different purposes. The language must be appropriate, and the layout must be easy to navigate for all members of the audience.

Types of technical publications

ERDC publishes eight technical document series. Any publication may be disseminated both by paper and electronic modes of distribution. A brief description of each series follows.

Technical Report (TR)

A Technical Report is the principal vehicle for documenting the results of a sponsored research and development project that has been completed or terminated. A Technical Report also may be prepared to report on significant milestones achieved during a phased or multi-year project.

Technical Note (TN)

A Technical Note is shorter and more narrowly focused than a Technical Report. It may be used to publish the following types of information:

- a project synopsis
- an interim report describing significant early results before all objectives of the investigation have been achieved
- spin-off results of a research project such as findings of interest that are not significant enough for a full technical report.

Miscellaneous Paper (MP)

This purpose of this series is to document ERDC research that was initially published in a refereed journal, conference proceedings, or as another type of shorter work such as a book chapter. Publication consists mainly of assigning an official ERDC number and distributing copies to the ERDC Library.

Contract Report (CR)

A Contract Report is one prepared under contract to an ERDC laboratory and authored solely by non-ERDC personnel. Contract Reports are either reproduced by PTTB from camera-ready copy prepared by the contractor or are prepared by PTTB from a draft furnished by the contractor. These reports are assigned an official ERDC number for internal tracking and reference purposes. If a Contract Report is intended for distribution to any external audience, it should be reviewed by PTTB to ensure that the front matter is complete and that the appropriate distribution statement is included.

Letter Report (LR)

The Letter Report series is intended for reporting the results of research intended for a small, restricted audience. Only minimal formatting is required. A Letter Report may be as short as a one-page letter, or it may consist of a formal summary letter covering a larger report with illustrations and appendixes. These reports are assigned an official ERDC number and distributed to the ERDC Library. If the findings are appropriate for public distribution, the Letter Report may be reformatted as an official Technical Report.

Monograph (M)

A Monograph is an original, comprehensive, and major work that advances the state of knowledge in a highly specialized technical field. Although narrow in scope, the subject matter is of wide interest to the author's community of technical peers and has implications far beyond a specific research and development project. As such, this category is rarely used.

Special Report (SR)

This publication series is for reports that do not fit into any of the other report categories. Examples include the following:

- conference proceedings (but not individual conference papers)
- instruction reports
- data reports
- computer program listings
- literature reviews
- annotated bibliographies.

Brochure (B)

A Brochure is a short, one-of-a-kind publication intended to promote broader awareness of ERDC research projects, products, facilities, or services. Typography, illustration, layout, and packaging may vary widely depending on the Brochure's purpose and intended audience.

Publication numbering

Official ERDC publication numbers are assigned exclusively by PTTB in order to avoid numbering duplication or conflicts. The numbering system differentiates between laboratory-level reports and Center-level reports, as described below. An ERDC publication number always includes the level of publication, the abbreviation of the report series, the two-digit year of publication, and a unique sequential number.

Laboratory-level publications

A laboratory-level report is one with all cited ERDC authors working within a single laboratory. All Contract Reports fall into this category because a contract is monitored by a single laboratory. The number for a laboratory-level report includes the following information:

- the Center abbreviation
- the laboratory abbreviation (preceded by a forward slash)
- the publication series abbreviation (preceded by a letter space)
- the two-digit calendar year (preceded by a hyphen)
- a unique arabic numeral (preceded by a hyphen without leading zero).

The first Environmental Laboratory (EL) Technical Report published in calendar year 2006, for example, is numbered ERDC/EL TR-06-1. The ninth Miscellaneous Paper published by the Cold Regions Research and Engineering Laboratory (CRREL) in calendar year 2006 would be numbered ERDC/CRREL MP-06-9.

Center-level publications

A Center-level publication is one with cited authors from more than one ERDC laboratory. Center-level report numbers include all the same elements as a laboratory-level report number *except* for the laboratory abbreviation. The third Special Report of 2006 jointly authored by researchers from the Geotechnical and Structures Laboratory and the Construction Engineering Research Laboratory, for example, would be numbered ERDC SR-06-3.

2 Uniform Content Requirements

Model content and style guidance

The basic content, presentation format, and literary style of ERDC reports are modeled on two widely accepted industry-standard references:

- American National Standard Z39.18-2005, *Scientific and Technical Reports—Preparation, Presentation, and Preservation* (ANSI/NISO Z39.18-2005
- *The Chicago Manual of Style – 15th Edition* (University of Chicago Press 2003).

ANSI/NISO Z39.18-2005, developed by the National Information Standards Organization, promotes uniform standards for documenting and presenting scientific and technical information. It incorporates flexibilities that can accommodate the requirements of many diverse fields and reporting forms. ANSI/NISO Z39.18-2005 is available for reading or download at http://www.niso.org/standards/resources/Z39-18-2005.pdf.

The Chicago Manual is a comprehensive reference on the essential mechanics of professional writing, including language use, punctuation, capitalization, and abbreviation. Publication manuals developed by many different scientific and engineering professional societies derive their basic style models from the Chicago Manual.

ANSI/NISO Z39.18-2005 and the Chicago Manual shall prevail in all matters of report content and style. However, supplementary industry or government manuals may be consulted to resolve issues that are not addressed either by the ANSI standard or the Chicago Manual.

Elements included in all reports

A report should be organized to suit the specific requirements of the topic and the audience. However, all ERDC reports must include the basic content elements specified in ANSI/NISO Z39.18-2005, as described below. Included in the discussion are several optional components, which are clearly designated as such.

Front matter

This is the term for pages that carry information identifying the document, its authors, the funding authorization, report contents, etc. Collectively it includes the cover, title page, table of contents, figure and table lists, preface, unit conversion factors, and other explanatory text. Page numbering is tracked with lowercase roman numerals. Examples of key front matter components are presented in Appendix A. Each is explained briefly below.

The *cover* presents basic information about a report's topic, authorship, laboratory of origin, and authorized distribution. A report number and date are printed on the cover to indicate that the document is an official ERDC technical publication. The cover is presented in a standardized format to project and reinforce ERDC's corporate identity to the customer, research proponents, and the public.

The *title page* includes the same information that appears on the cover plus detail about project sponsorship, funding, and author affiliation. The title page is counted as the first numbered page in the report, but the page number is not displayed.

The format of certain information on the cover and title page will depend on whether the report was prepared by a single laboratory or by researchers from two or more laboratories. See Appendix A for details.

The *abstract* appears on the reverse side of the title page. It summarizes the research problem, project objective, and outcome of the investigation. It should run no more than 200 words. Also on the reverse side of the title page is the standard *disclaimer* of any implied government endorsement of products discussed in text.

The *distribution statement* is a critical component of both the cover and the title page. Every ERDC technical publication must be imprinted with one of the seven primary distribution statements required by Department of Defense Directive (DoDD) 5230.24. A distribution statement constitutes ERDC's decision on who is authorized to read the report. Most reports published by ERDC are intended for unrestricted public access and carry Statement A: "Approved for public release; distribution is unlimited." However, access to many reports may need to be restricted for reasons ranging from proprietary information content to national security interests related to militarily critical technology. Appendix B presents the text of every nonclassified distribution statement and the approved justifica-

tions for applying each one. Only reports labeled with Statement A shall be posted to the World Wide Web for unrestricted public access.

The *contents* pages include the table of contents and lists of figures, tables, plates, etc. The table of contents will usually include the titles and page numbers for at least two levels of text organization (*chapter* and *section*), and may include lower level subsection headings if it will help the reader to navigate the document more easily. Lists of illustrations and tables include the object number, caption, and page number. Figures, tables, and plates in appendixes need not be included in the contents lists.

A *preface* is included in all ERDC reports to present essential non-technical documentation of the research project, such as funding authorization, sponsorship, technical contributors to project execution, chain of supervision, and the authors' acknowledgments. Figure A3 presents a sample showing all the required elements.

A *unit conversion factors table* is included in all reports that do not use metric units or dual units. The table should include only those U.S. customary units used in the report. It should be compiled from the master list of conversion factors maintained by PTTB. For more information, see "Expressing and converting units of measure" (page 14).

A *notation list* also may be included to define characters, symbols, and abbreviations used to express technical facts or quantities. It appears after the unit conversion factors. Figure A4 presents a formatted sample.

Introductory chapter

In the introductory chapter the page numbering system changes from roman to arabic numerals, with the numbering restarting at page 1. This is the first chapter in which technical content is introduced. The required sections are background, objective, and approach.

The *background* section defines the problem addressed by the research and its impact on the U.S. Army. It cites related previous studies and explains why the current research is necessary. It also may present other background information that provides essential context for the reader. Examples include the following:

- controlling regulations or legal requirements
- prospective users of the report or the technology.

The *objective* is a concise statement of what the research is intended to accomplish.

The *approach* section explains the research methodology. If the methodology is complex or otherwise warrants a chapter of its own, the approach section may simply cross-reference the reader to the appropriate chapter.

ANSI/NISO Z39.18-2005 does not prohibit additional sections in the introductory chapter. For example, a *scope* section may be helpful to explain any limitations, caveats, etc., of which the reader should be aware. In some cases, supplementary *technology transfer*[1] or *contact information* also may be appropriate for the intended audience.

Technical reporting and discussion

This portion of the report begins with Chapter 2 and may include any number of additional chapters. It reports all details that the reader needs to understand how the research was conducted, how the findings were documented, and how the results were validated. The technical discussion will often include a chapter of the author's in-depth analysis or interpretation of results to provide a clear context for the concluding chapter.

Concluding chapter

The concluding chapter is the last chapter in the main body of the report before the reference list. The title and content may vary depending on the project type and audience. The chapter is usually called "Summary," "Conclusions," or "Conclusions and Recommendations."

A technical report may conclude with a *summary* chapter if its purpose is to document empirical observations or straightforward research findings such as the results of a field demonstration or a laboratory test series. A summary typically reviews the research results in more detail than the abstract.

A chapter of *conclusions* differs from a summary chapter in that it presents or reviews the author's technical interpretation of the research results. Conclusions concisely help the reader to understand how the research objective was met and what the results mean in terms of the Army

---

[1] This information might include online sources for required computer software or related technical information. Recommendations on mode of technology transfer, however, will usually be presented in the concluding chapter rather than the introductory chapter.

problem described in the background section. Conclusions should be included for every secondary objective stated in the introductory chapter.

Most reports will include *recommendations* for the project sponsor. Recommendations generally will pertain to (1) how the research product or results should be used to address the problem defined in the first chapter or (2) what the sponsor may do to transition a technology product into advanced development, field demonstration, or commercialization.

References

A reference list is presented immediately after the final numbered chapter of the report, but before any appendixes. Formats and styles prescribed in the Chicago Manual of Style should be used. Most ERDC reports will use the *author-date* system and corresponding reference list form described in the Chicago Manual. An alternative style prescribed in the Chicago Manual, the *note-bibliography* system, may be used by authors working in disciplines in which that style is customary.

The reference list should include every information source cited in text plus any uncited sources that were drawn upon. The reference list for this Guide, presented on page 28, may be used as a model for common types of source documentation including books, serial publications, government documents, and unpublished material.

Back matter

This category of report content encompasses appendixes and the report documentation page. Some reports may have other optional types of back matter such as a glossary or a list of acronyms, and may include a primary distribution list at the request of the sponsor.

Appendixes consist of any supporting text, illustrations, or data necessary to clarify or verify research findings but are too detailed or long to incorporate into the main body of the report without distracting the reader. Each appendix is customarily designated by a letter rather than a chapter number.

The *report documentation page* is prepared by filling out a Standard Form (SF) 298 using information provided by the author. Although it typically requires only one page, the SF 298 may be continued on the reverse side when necessary, as illustrated in Figure 1. It is the last page in the report,

presented after all other back matter. The report documentation page is usually completed by PTTB during final draft preparation, after an official report number has been assigned. The *abstract* (block 14) may be no more than 200 words, as required by the Defense Technical Information Center (DTIC), and is identical to the one presented in the front matter. The *subject terms* (block 15) are key words used for library cataloging purposes. These terms are technical words or short phrases that identify the principal subjects covered in the report. They also may include relevant equipment model designations, trade names, military project code names, or geographic locations.

Figure 1. Sample report documentation page, using reverse side for extra information.

Because electronic posting to the World Wide Web is the primary mode of distribution for ERDC technical publications, a copy of the *distribution list* is rarely included in an ERDC report. An exception to this rule would be justified by a request from the sponsor, in which case the distribution list would appear as the page immediately before the SF 298.

3   The Publishing Workflow

The term *publishing workflow* refers to the process of developing research findings from the manuscript stage into a published document. The publishing workflow encompasses planning, writing, editing, layout, technical review, and final approval. It also includes distribution and accession to ERDC, Corps, and Department of Defense document repositories. The sequence of steps in the workflow may differ among ERDC laboratories and within laboratories from one project to another, but every processing step must be completed before an official ERDC number will be assigned to a publication.

Planning

It is recommended that the author start planning and developing the report while the investigation is under way whenever feasible. Much production lead time can be cut by consulting with PTTB personnel during the report planning phase. A technical editor can help to resolve questions about report series, organization, scope, and presentation. A visual information (VI) specialist can provide advice and support on special figure and table presentation requirements, and can help to ensure that graphics files are submitted in a compatible electronic format and are of suitable resolution for the intended modes of distribution.

Determining audience, scope, and organization

The first planning decision is to identify the primary audience of the report. This decision will determine much about document report series, scope, tone, and distribution. Because of the potential security and legal issues related to distribution of Army technical information, the author should be generally familiar with the rules controlling report distribution and restrictions. See "Front matter" (page 7) for details about distribution statements.

The author, with the help of an editor if desired, should determine which material is essential for the published research documentation and which may be archived to the research project file. It is also very useful during the planning stage to determine which material should fall into the main body of the report and which should be presented as appendixes. Early

elimination of nonessential technical information saves money and reduces processing time.

The presentation of computer-generated information should be carefully considered and designed to facilitate later assembly of the data into a publishable form.

Section 508 compliance

Government agencies are required by Section 508 of the Rehabilitation Act (United States Code, Title 29, subsection 794d) to provide disabled people a level of access to public electronic information that is comparable with the access offered to others. Section 508 provisions related to software operating systems, applications, and Web-based information technology affect how ERDC technical publications are prepared and disseminated.

ERDC authors are, to the maximum extent feasible, instructed to prepare technical reports using computer software certified as compliant with Section 508. Corps of Engineers standard business and publishing software such as Microsoft Office and Adobe Acrobat are Section 508 compliant. A compliant application embeds descriptive tags in its output files, and these tags can be read to visually impaired customers by voice synthesis technology incorporated into most recent computers.

Guidelines for using copyrighted material

All authors and contractors are responsible for complying with U.S. copyright law (U.S. Code, Title 17 – Copyrights). The law includes a "fair use" doctrine that permits the limited use of small portions of copyrighted material for research, education, and certain other purposes. Exceeding the bounds of fair use without permission from the copyright owner constitutes an infringement of copyright.

Copyrighted text may be incorporated using the common rules for paraphrasing and attributing the words, including a very limited amount of direct quotation. Copyrighted visual information may be reproduced only by written permission of the copyright holder. Appendix C, Figure C1, presents a standard copyright permission request form.

Expressing and converting units of measure

Authors are responsible for incorporating all appropriate SI, or metric, units of measure into ERDC draft reports. The preferred approach is to use SI units exclusively. However, for technical disciplines in which SI units are not recognized as the industry standard, the author may use either dual units or a table of standard conversion factors. When dual units are used, the SI unit should be listed first followed in parentheses by the equivalent value stated in the appropriate non-SI unit, e.g., 14 sq m (150 sq ft). If a conversion factors table is used, the author should derive it from the ERDC master table of conversion factors. The master table is incorporated into the ERDC technical report word processing template. Table 1 shows a subset derived from the master table as it might appear in an ERDC technical report.

Table 1. Sample conversion factors table.

Multiply	By	To Obtain
British thermal units (International Table)	1,055.056	joules
cubic inches	1.6387064 E-05	cubic meters
cubic yards	0.7645549	cubic meters
degrees (angular)	0.01745329	radians
degrees Fahrenheit	(F-32)/1.8	degrees Celsius
feet	0.3048	meters
knots	0.5144444	meters per second
miles (nautical)	1,852	meters
miles (U.S. statute)	1,609.347	meters
pounds (force)	4.448222	newtons
square feet	0.09290304	square meters
square inches	6.4516 E-04	square meters
tons (nuclear equivalent of TNT)	4.184 E+09	joules
tons (2,000 pounds, mass)	907.1847	kilograms

Preliminary draft preparation

Author responsibilities

A preliminary draft must be complete and technically accurate. References should be fully cited in accordance with Chicago Manual style. Illustrations should be technically accurate and legible if not fully refined. Com-

puter data printouts of data may be used in the preliminary draft if they are legible to the technical reviewer. Items that require a copyright clearance should be identified by the author, as discussed on page 13, and permission to reprint should be secured by the author before routing the draft to PTTB, if feasible. When the preliminary draft is complete, the author submits it to his or her technical organization for review.

ERDC technical organization review

The responsible ERDC technical organization reviews the preliminary draft and resolves any technical queries that may arise. After review of the preliminary draft is complete, the technical organization completes ERDC Form 7-E (Appendix C, Figure C2) and is responsible for having the form signed by the responsible authority at the laboratory level. This authority may be a branch chief, division chief, laboratory director, or other action officer in accordance with applicable ERDC policy and established laboratory procedures.

ERDC Form 7-E includes the technical organization's processing instructions for PTTB. All blocks should be filled out accurately and completely. The appropriate distribution statement should indicated on the back of the form.

Sponsor review

Depending on established laboratory practice or sponsor requirements, the preliminary draft may be formally reviewed by the sponsoring organization either before or after processing by PTTB.[1] This type of review should be requested using a formal transmittal letter attached to the draft. In addition to requesting a technical review, the letter should call attention to the proposed distribution statement and request concurrence. If the sponsor does not concur with the proposed distribution, the reason should be noted by return correspondence so the ERDC technical organization can determine the appropriate new distribution statement as it should appear on the final publication. The transmittal letter should also request that the sponsor review the report in a timely manner in order to avoid delays in publishing and technology transfer.

---

[1] The author may furnish coordination review copies to the sponsoring organization informally as desired during the process of developing a preliminary draft.

When the sponsor has completed review of the preliminary draft, the sponsor's comments or approval to proceed should be documented in writing or by e-mail and retained for the record. A copy of the sponsor's comments or approval should be attached to the draft when it is routed to PTTB for cost estimating and processing.

Technical editing and query resolution

When the preliminary draft is received by PTTB, it is logged into the editing queue according to procedures that are in place to support the performing laboratory. The draft will be reviewed to establish an approximate processing schedule and produce a cost estimate. Questions about the draft or the instructions to PTTB will be resolved by the contact person designated in block 4 of ERDC Form 7-E. The report will then be processed through editing, layout, etc., according to the instructions provided.

The edited draft is returned to the author with any queries logged by the technical editor. The author reviews the editing and collaborates with the editor to address any queries. On completion of the author's review, the draft is returned to PTTB for incorporation of any author revisions. Additional information about the technical editing process is presented under "Editing and visual information support" (page 25).

Final draft preparation

PTTB responsibilities

PTTB prepares the final draft in accordance with the appropriate standards of format, arrangement, and style. The final draft is a complete and accurate facsimile of the report as it will be published, subject to final review by the technical organization and the laboratory. A copy of the final draft is prepared for every participant in the final approval reviews. At minimum, the report will be reviewed by the author's technical organization. Depending on the project and its specific workflow, it may also be necessary to prepare final review copies for other reviewers. The specific workflow at this point depends on the procedures in place at the author's laboratory and technical organization.

Technical organization final review responsibilities

The final draft is thoroughly checked within the author's technical organization to ensure that the report is accurate and meets its stated objectives.

Any request by the technical organization for final revisions should be documented clearly in writing for use by PTTB.

The technical organization also is responsible for ensuring that any necessary external reviews are conducted and that review comments are incorporated or forwarded to PTTB for inclusion. Examples of such external reviewers include the sponsor, user group representatives, or other peer reviewers.

Laboratory approval to publish

ERDC Form 9, "Publication Approval Form," is shown in Appendix C, Figure C3. This is the form on which the responsible laboratory director indicates the final approval to publish. It applies both to electronic and printed distribution. Electronic approval or a Web-enabled approval method is also acceptable as long as the necessary signatures in ERDC Form 9 are included and PTTB is provided a hard copy of the signatures for the record.

Final revisions and quality check

Upon receipt of the approved final draft, PTTB will make any required revisions prior to completing the report through printing or posting on the Internet. In accordance with AR 25-30 (Headquarters, Department of the Army 1999), PTTB is the only authorized source for printing and duplicating services for use in reproducing ERDC publications.

Printing and publishing

Electronic distribution

Report distribution by electronic means is the principal mode of distribution for ERDC technical reports. PTTB performs both primary and secondary distribution by electronic means. The principal electronic mode of publication is a word processing file converted to PDF by PTTB and posted to the ERDC Library's Web-based document server. The file itself is not distributed beyond the ERDC Library; PTTB maintains a *listserver* used to notify customers by e-mail when new ERDC reports are posted to the ERDC Library Web server. Different lists are maintained for work related to each of ERDC's technical domains. Technical organizations may work with PTTB to develop e-mail lists for new technology transfer purposes.

PTTB also initiates secondary distribution of numbered ERDC publications by distributing the final PDF file to DTIC. Actual secondary distribution services are provided by DTIC on the basis of the report's distribution statement. DTIC provides reports approved for public release to the National Technical Information Service for dissemination into the public domain. Requests to DTIC for reports with restricted distribution are referred to the controlling agency named in the distribution statement.

Distribution of printed reports

Although printing is no longer the standard mode of publication for the Corps of Engineers, PTTB prints a limited number of hard copies as part of the primary distribution process. These hard copies of ERDC publications are provided to a minimal distribution list maintained by PTTB, including the ERDC Library.

If an author or technical organization needs a supplementary distribution list for a specific report or program, one may be developed and attached to the final draft so PTTB may coordinate print production and dissemination. All customer-developed distribution lists should provide only the minimum number of printed copies necessary to ensure effective technology transfer to the target audience.

Special workflow and distribution cases

Contract report preparation and duplication

Government printing and binding regulations published by the Joint Committee on Printing (1990), Congress of the United States, specifically prohibit contractors from serving as the prime or substantial source of printing. Paragraph 35-1 of the regulation states that:

> The inclusion of printing... within contracts... for services such as... engineering, and research, is prohibited unless authorized by the Joint Committee on Printing.

The contract will specify that the contractor furnish the report or draft in the form prescribed by this guide, including valid distribution and disposition statements and a completed SF 298. Every Contract Report will have the standard ERDC cover, which includes the names of the contract authors. The SF 298 may include the contractor organization's report num-

ber and other information desired by the contractor. PTTB performs primary distribution, including up to 25 copies for the contractor.

Publications for small or special-interest audiences

Miscellaneous Papers, Special Reports, and Letter Reports (see "Types of technical publications," page 2) are typically intended for a narrow audience. Distribution is generally minimal, and less rigorous editorial standards are often appropriate in order to deliver the product rapidly to the audience. Such publications must nevertheless be technically correct and clearly written, and visual information should be legible and professional in appearance. Also, these publications must be reviewed and approved by the responsible laboratory before being printed or otherwise disseminated. Printing and duplicating services will be obtained from PTTB. Publications prepared to less rigorous editing and visual standards may be restricted from posting to the World Wide Web.

Theses and dissertations

A thesis or dissertation completed by an ERDC employee as a product of Corps-funded academic work may be published as a formal ERDC report. These works can be assigned an official Technical Report number, posted to the Web, and printed as-is.

Reports prepared by ERDC for publication by others

Some technical documents are prepared by ERDC authors for a sponsoring organization that operates its own publishing program. Such documents are assigned an official ERDC publication number within the appropriate report series, with the sponsoring organization's number filled into block 11 on the SF 298. At least three copies of the edition published by the sponsor should be routed to PTTB for assignment of the report number and distribution to the ERDC Library. If the document is classified, only two copies should be provided to PTTB.

4   Notes on Preparing a Draft

The hands-on work of preparing a draft report typically involves the collaboration of the author, a technical editor, and a visual information specialist. PTTB has all capabilities necessary to prepare a final report from a simple typed manuscript, but authors with a higher level of word processing proficiency may wish to apply some of the electronic formatting as they compose text. This chapter describes essential aspects of preparing a draft and presents a number of tasks that may be performed by author, editor, or VI specialist depending on time and resource constraints.

Word processing

Standard word processing software

The Corps of Engineers standard word processing application is Microsoft Word for Windows (or *Word*). The preferred version changes over time, so if authors or contractors have questions about the current ERDC standard they should contact PTTB. The use of any word processing program other than Microsoft Word for Windows may result in software incompatibilities, processing delays, and additional processing costs.

Document templates

PTTB uses Word document *templates* to eliminate much repetitive mechanical formatting and manage layout preparation efficiently. The central feature of a PTTB report template is the *stylesheet*, which enables the user to apply standard text formats with a single mouse click. By applying style tags to text, the user can eliminate much of the labor and unpredictability experienced when formatting text manually. PTTB maintains two Word templates for preparing technical documents:

- *ERDC_TR.dot*, which includes preformatted placeholders for many embedded graphical and textual elements. This is the template that PTTB uses to prepare drafts, and is appropriate for other users who have a good working knowledge of styles, section numbering, headers, and other Word productivity features.
- *ERDC_TR_manuscript.dot*, which includes only the stylesheet and some simple tutorial information for the less advanced user. This template requires only a basic knowledge of how to apply styles (which is

explained in the tutorial text), and may be used to prepare a manuscript that is easily importable into the full-featured template by PTTB.

Table 2 lists the style tags most frequently used in ERDC technical publications. A complete list is included in the *ERDC_TR.dot* template file. Correct application of these styles can significantly reduce PTTB word processing and layout charges. Authors are encouraged to use a PTTB template but are not required to do so. A PTTB VI specialist or technical editor can provide information on obtaining, installing, and using templates.

Table 2. Principal style tags used in ERDC reports.

Style Tag Name	Application
Body Text	Regular narrative text
Block Text	Direct quotation of three or more lines; other text to be emphasized
Caption	Word's default style when any autonumbered caption is inserted
Caption Table	Provides correct paragraph drop after a table caption
Caption Figure	For manual application to unnumbered figure caption
Graphic Inline	For standardized positioning of inline (but not floating) graphics
Heading 0	Front matter and appendix chapter title (unnumbered)
Heading 1	Chapter title (numbered)
Heading 2	Main section heading
Heading 3	Subsection heading
Heading 4	Sub-subsection heading
List Bullet	Standard bulleted list
List Number	Standard numbered list
Sub-paragraph	First-level subparagraph
Sub-paragraph 2	Second-level subparagraph
Reference Text	For all items presented in the reference list
Table Text	Data presented in a table
Table Text Compact	Alternative table data format for meeting page width constraints
Table Column Heading	Column heading labels

Document formatting without an ERDC template

Authors who choose not to use an ERDC document template may submit drafts to PTTB in a generic manuscript form based on the user's individual word processor defaults. To facilitate processing by PTTB, this type of manuscript should conform to the following baseline requirements:

- The current Corps-standard word processing program (Microsoft Word for Windows) must be used to prepare the manuscript.
- The page margins should be set to 1.25 in. (top), 1 in. (bottom), 1.5 in. (left), and 1.5 in. (right).
- Text should be formatted using the style tags listed in Table 2; if a tag is not available in the document, one with a similar name may be substituted (e.g., if *Heading 0* is not available, use *Heading 1*).
- All pages should be numbered.
- A table of contents should be included.

Text fonts and appearance in a generic manuscript may look much different from those of an ERDC final report, but that is not important at the preliminary draft phase. These items are easily converted to the correct format when PTTB copies or imports the text into the template. Authors should avoid applying text formats manually because the practice is incompatible with efficient document management.

Visual information preparation

The following information pertains to any method of draft preparation, whether using an ERDC template or a generic manuscript format.

Tables

Tables should be inserted and numbered in the sequence in which they are referenced in text. They may be placed in line with text, or collated in order at the end of the chapter or the end of the word processing file. A table begins with a numbered caption that concisely describes the data presented. The caption includes the label *table*. Captions may be automatically labeled and numbered using the *insert caption* function available in the current version of Word. (Refer to Word's *Help* file for more information.)

Tables are centered on the page and laid out to a width that offers the best readability. A table caption may be divided using a *manual line break* for purposes of adjusting caption line length to the width of a narrower table.

The table and its cells are bounded by a very thin border (1/2 point or hairline) in an arrangement that best organizes the data. The main style tag used for data is *Table Text*, and there are also tags for column headings and for compact presentation of data as indicated in Table 2. Tabular data also may be copied or imported into Word from a Microsoft Excel spread-

sheet. It is often helpful to consult with a technical editor or VI specialist when a large or complex Excel worksheet must be reproduced in a draft.

Authors should avoid presenting tables in a "landscape" format that the reader must turn sideways in order to read the data. Use of the *Table Text Compact* style in the template (see Table 2) should make it unnecessary to use a landscaped format for all but the widest tables. When necessary to avoid landscaping, wider tables also may extend as much as a half-inch beyond the right and left edges of the text column, up to the width of the page header. In cases where very wide tables are unavoidable, the author is asked to submit those tables in a separate file that contains only landscaped tables. Alternately, a technical editor or VI specialist can help the author to create properly formatted landscape sections in a technical report file.

Graphics

The term *graphics* refers to photographs, drawings, charts, and other types of illustrations. A concise, descriptive numbered caption appears beneath most graphics except for illustrations that are part of an instructional narrative and require no numbering for cross-referencing purposes. A graphic is usually labeled as a *figure*, but other labels (such as *plate*) may be used if it is necessary to differentiate a specific style of illustration from other types of graphics in the report.

Individual graphics are centered between the left and right page margins and are bounded by a 1/2 point or hairline box. The width of an individual graphic is generally controlled by its level of detail, digital resolution, and aspect ratio. Whenever possible, however, all graphics appearing on the same page should be adjusted to the same width to promote an orderly, professional-looking layout.

Numbered graphics should be inserted in the order in which they are referenced in text. They may either be inserted immediately after they are mentioned in the text, or else collated in order at the end of the chapter or the end of the word processing file. Like table captions, figure captions may be automatically labeled and numbered using the *insert caption* function available in the current version of Word. (Refer to Word's *Help* file for more information.) Also, figure captions may be appropriately adjusted using a *manual line break* for purposes of shortening an individual caption line length to match the approximate width of a narrower graphic.

If an author does not wish to embed images into the word processing file, he or she may provide graphics to PTTB as stand-alone files. In all cases, authors are strongly urged to retain their original stand-alone digital files at least until the report has been published. Table 3 provides recommendations for achieving the best publishing results with digital graphics. Note that use of the bitmap-based file formats BMP (Bitmap) and PCX (PC Paintbrush) is strongly discouraged because they do not enlarge well.

Table 3. Preferred digital file formats for graphics.

Type of Image	Preferred Format [a]	Remarks
Continuous-tone photograph	JPEG, TIF	For best results do not compress.
Standard charts and graphs	PNG, WMF	Avoid GIF. Problems sometimes occur in PDFs created from a file that includes GIFs.
Engineering drawings, plots	TIF, PNG, WMF	Native graphics file formats in high-end engineering programs may not be importable into Word, so these export formats are preferred.
Screen shots	PNG, JPEG	JPEG sometimes works better for images with many subtle shades of color or gray.

[a] File extension abbreviations may differ slightly among computer operating systems. JPEG is Joint Photographic Experts Group; TIF is Tagged Image Format; PNG is Portable Network Graphics; GIF is Graphic Interchange Format; WMF is Windows Metafile.

Figures formatted to appear in line with text are easier to work with than figures formatted as a "floating" object. The ERDC templates include a style tag (*Graphic Inline*) that may be applied to in-line graphics to automatically align and space them.

Authors should avoid presenting figures in a landscape format. When necessary to avoid a landscaped layout, wider figures may extend as much as a half-inch beyond the right and left edges of the text column, up to the width of the page header.

If a graphic is available only as camera-ready hard copy, either on paper or film, it may be scanned into the appropriate format listed in Table 3. Continuous-tone images should be scanned at no less than 300 dots per inch at actual output dimensions; line art should be scanned at no less than 600 dots per inch at actual output dimensions.

Equations

Equations other than simple, single-line expressions should be developed using either the Microsoft Equation Editor, which is built into Word, or

MathType, which is a professional version of the Equation Editor. Each equation is centered between the left and right page margins, and the equation number is set flush right without a label. Figure 2 illustrates the typical placement of an equation, its number, and its definition of terms.

$$\delta_y = \varepsilon_y L = \frac{F_y}{E} \sqrt{H_2{}^2 + W^2} \tag{1}$$

where:

δ_y = elongation of the braces
ε_y = the strain of the brace material at yield
L = the length of the brace under tension, assuming that the braces extend from one anchor bolt at the base diagonally to the other at the opposite side and top
F_y = yield strength of the brace material
E = modulus of elasticity
H_2 = the height of the frame
W = the width of the frame in the direction in which the load is acting.

Figure 2. Typical style for presenting equations and terms.

The default MathType preferences for equation fonts and character sizes are embedded in the ERDC templates. Also, the desired alignments for equations, caption numbers, and equation terms are built into the tab settings of the *Equation*, *Caption*, and *Equation Terms* style tags. However, authors who are not proficient with equation-formatting software or templates need not be concerned about the fine points of equation formatting, as support for accomplishing these tasks is available from PTTB.

Editing and visual information support

Editorial responsibilities and duties

Editors help authors to prepare technical documents that represent technical excellence and directly support the ERDC mission. An editor's primary function is to serve as an advocate for the intended reader of each document. This means that the editor must provide candid feedback to the author in the effort to avoid common pitfalls in technical writing such as

inappropriate level of detail, ambiguity, unnecessary jargon, verbosity, and overuse of acronyms.

A technical editor is trained to help authors produce documents that are well organized, clearly written, and technically accurate. The editor also provides expertise on the effective use of language and visual information tailored to a report's intended audience.

The general responsibilities of a technical editor include the following:

- ensuring that a document's content, organization, style, and presentation formats conform to the ERDC's publication standards
- providing support and advice to authors about report preparation
- coordinating all publishing processes for which PTTB is responsible
- providing final quality assurance for every report released in an ERDC technical publication series.

An editor's duties will vary from project to project. Common editorial tasks include the following:

- reviewing and correcting grammar, punctuation, and style
- querying the author about passages that may be ambiguous or appear to contain errors
- identifying apparent redundancies, inconsistencies, or gaps in the narrative
- identifying problems with document organization and suggesting solutions
- ensuring that all necessary information is provided to document references, and that any copyrighted material included in the report is used by explicit written permission
- assisting with writing or rewriting as requested.

Visual information support

VI specialists provide word processing, page layout, graphics processing, and related services to help ensure that ERDC technical publications conform to Center standards. Working closely with the technical editor, VI specialists control the effectiveness and quality of document layout and published output. Their responsibilities may include coordination of printing and binding. They also prepare final electronic document files for conversion into PDF or other Web-compatible formats and assist with posting final reports to the ERDC Library.

VI specialists help to ensure that ERDC technical publications have a consistent corporate visual identity, a professional appearance, and visual clarity.

Levels of editing

Although every ERDC publication must present technical excellence and professionalism, editing requirements may vary widely depending on the composition and size of the target audience, the report series, the mode of distribution, and the scope of dissemination.

One of three levels of editing may be specified for an ERDC report:

- *substantive (content) editing*, which includes a full editorial review of technical content for organization, logic of presentation, gaps and redundancies, or other significant discontinuities, plus all necessary copy editing tasks
- *copy editing*, which addresses all aspects of textual and graphical correctness in terms of grammar, language use, model formats (i.e., ANSI/NISO and Chicago), and proper use of references
- *conformance checking*, which includes no substantive (content) or copy editing, but addresses only administrative requirements such as correctness and completeness of the report cover, preface, table of contents, SF 298, etc.

ERDC Form 7-E (Appendix C, Figure C2) defines each level, and this form is to be used by the author's technical organization to specify the level of edit appropriate for the document type and audience. ERDC publishing policy requires either substantive editing or copy editing of any report distributed Corps-wide or greater and posted to the World Wide Web.

References

American National Standards Institute. 2005. *Scientific and technical reports –
preparation, presentation, and preservation.* ANSI/NISO Z39.18 1995. New
York: American National Standards Institute.

American Society for Testing and Materials. 1993. *Standard practice for use of the
International System of Units (SI) (the Modernized Metric System).*
Designation: E 380 93. Philadelphia, PA: American Society for Testing and
Materials.

Brusaw, C. T., G. J. Alred, and W. E. Oliu. 1987. *Handbook of technical writing.* 3d ed.
New York: St. Martin's.

Bryant, S. 2005. Five tips for PDF perfection. *PDF Zone*, November 18. http://www.pdfzone
.com/article2/0,1895,1883901,00.asp.

Department of Defense. 1987. *Distribution statements on technical documents.* DoD
Directive 5230.24. Washington, DC: Department of Defense.

Ferris, S. P. 2002. Writing electronically: The effects of computers on traditional writing.
Journal of Electronic Publishing 8(1). http://www.press.umich.edu/
jep/08-01/ferris.html.

General Services Administration. 2006. Section 508: 508 law, and linked Web pages,
http://www.section508.gov/index.cfm?FuseAction=Content&ID=3 (accessed 26 January
2006).

Gove, P. B., ed. 1993. *Webster's third new international dictionary.* Springfield, MA:
Merriam-Webster.

Hardenberg, M. J., and G. L. Cohen. 2005. Personal communication with Marsha C. Gay.
November 19. U.S. Army Engineer Research and Development Center, Vicksburg,
MS.

Headquarters, Department of the Army. 1985. *Authorized abbreviations, brevity codes,
and acronyms.* Army Regulation 310-50. Washington, DC: Headquarters,
Department of the Army.

——. 1986. *Standards for technical reporting.* Army Regulation 70-31. Washington, DC:
Headquarters, Department of the Army.

——. 1999. *The Army publishing and printing program.* Army Regulation 25-30.
Washington, DC: Headquarters, Department of the Army.

Headquarters, U.S. Army Corps of Engineers. 1994. *Metric measurements in USACE
publication media.* Engineer Regulation 1110-1-4. Washington, DC:
Headquarters, U.S. Army Corps of Engineers.

Hodges, J. C., M. E. Whitten, and S. S. Webb. 1998. *Harbrace college handbook.* 13th ed.
San Diego: Harcourt Brace Jovanovich.

Joint Committee on Printing. 1990. *Government printing and binding regulations*. S. Pub 101-9, no. 26. Washington, DC: U.S. Government Printing Office.

Katzoff, S. 1968. *Clarity in technical reporting*. 2d ed. SP 7010. Washington, DC: Scientific and Technical Information Division, National Aeronautics and Space Administration.

Rathbone, R. R. 1961.*Writing and editing reports*. Publication No. 49. Cambridge: Department of Humanities, Massachusetts Institute of Technology.

Reisman, S. J., ed. 1963. *A style manual for technical writers and editors*. New York: Macmillan.

Strange, J. N., and B. Mather. 1966. *The significance of numbers and the reporting of numerical values*. Miscellaneous Paper No. 5-770. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

Swanson, E. 1987. *Mathematics into type*. Providence, RI: American Mathematical Society.

University of Chicago Press. 2003. *The Chicago manual of style*. 15th ed. Chicago: University of Chicago Press.

U.S. Army Engineer Research and Development Center. 1999. *ERDC Technical publishing and printing*. Center Regulation 25-30-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

——. 2001. *Engineer Research and Development Center Internet Web site management*. Center Regulation 25-1-2. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Army Engineer Waterways Experiment Station. 1977. *Guide for effective engineering graphics*. Instruction Report O-77-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

U.S. Government Printing Office. 1984. *Style manual*. Washington, DC: U.S. Government Printing Office.

Weil, B. H., ed. 1975. *Technical editing*. New York: Reinhold.

Zimmerman, D. E., and D. G. Clark. 1987. *The Random House guide to technical and scientific communication*. New York: Random House.

Appendix A: Facsimiles of Required Front Matter Elements

Figure A1 shows a representative example of a laboratory-level ERDC technical report cover and title page. This style of cover and title page is used when all authors work within the same ERDC laboratory. Note that the report number, which appears on both pages, includes the laboratory abbreviation in its prefix.

If the example report had been coauthored by a contractor, his or her name would be included on the cover with the laboratory authors. On the title page, however, the contractor's name and organizational affiliation would be shown below the laboratory author names and affiliation, using the same presentation format.
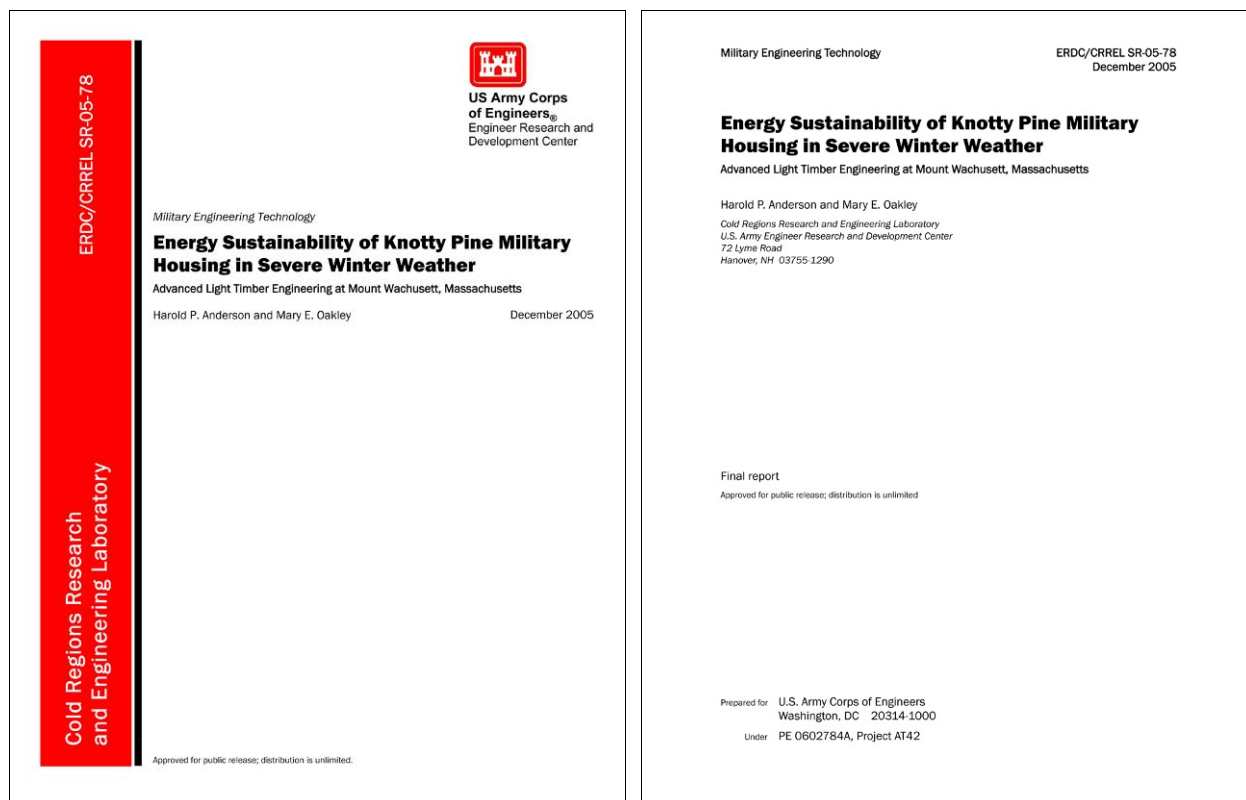

Figure A1. Sample cover and title page for laboratory-level reports.

Figure A2 shows a representative example of a Center-level report cover and title page. This style of cover and title page is used for reports authored by personnel from two or more ERDC laboratories. Note that the

report number, which appears on both pages, does not include a laboratory abbreviation in its prefix. Also note how authors from each participating laboratory are listed separately on the title page.

If this example Center-level report had been coauthored by a contractor, his or her name would be included on the cover with the ERDC authors. On the title page, however, the contractor's name and organizational affiliation would be shown separately from the ERDC authors, using the same presentation format.
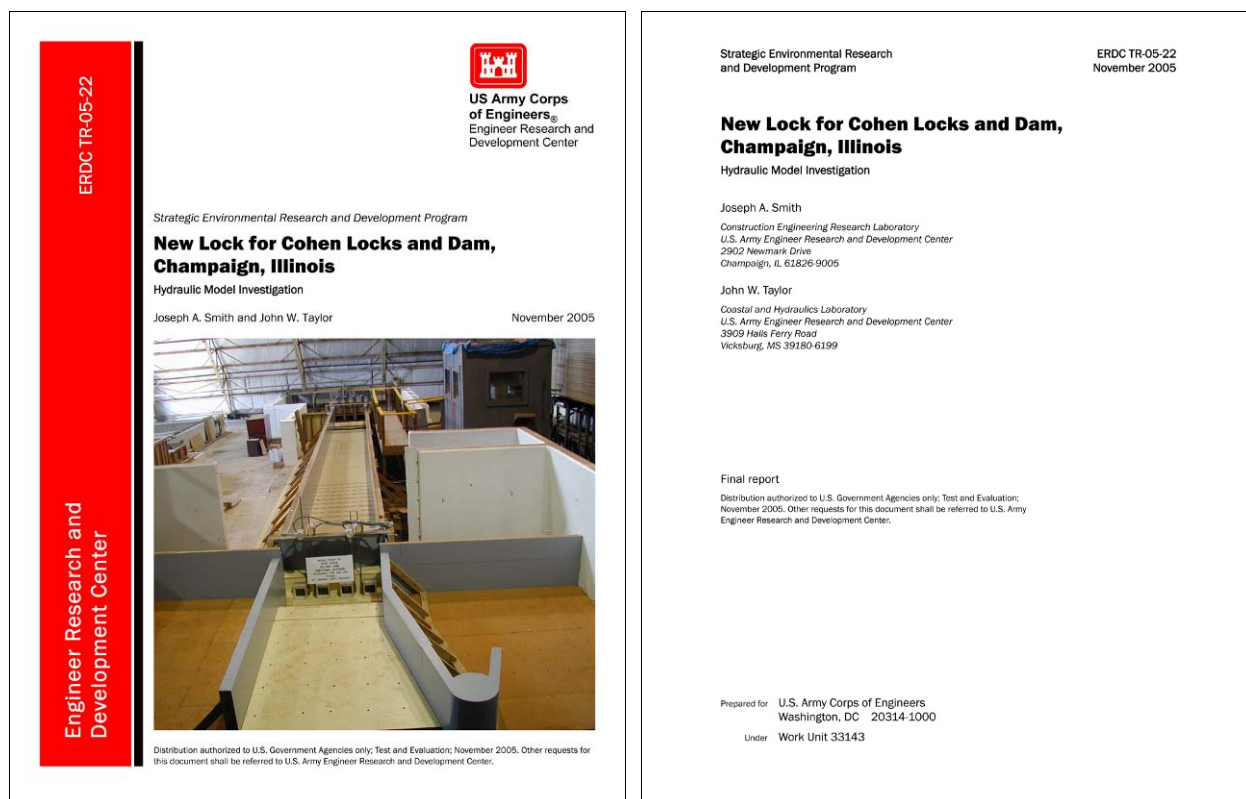

Figure A2. Sample cover and title page for Center-level reports.

Figure A3 shows an example of a technical report preface. In addition to the basic content requirements described under "Front matter" (page 7), this sample includes supplementary program information and acknowledgments of external research partners (paragraph 1). If this Preface had included any acknowledgments related to the preparation of the report, those would have been included in paragraph 2.

The supervisors, managers, and executives named in the Preface are the individuals who were in those positions during preparation of the report, including personnel officially serving in an acting capacity.

Preface

This report is a deliverable product under the military direct-allotted Department of the Army Project AT40, Work Package AT40-256, "Protection Against Terrorist and Conventional Attacks in Contingency Environments (PATCACE)," Work Unit AT40-SB-003, "Structural Response and Assessment for MOUT," and is part of a Science and Technology Objective. This research supports the Worldwide Construction Practices program that is being developed under the work unit. The study was conducted in collaboration with the Joint Technical Coordination Group, Munitions Effectiveness office in support of the Building Analysis Module (BAM). Anna Barnette, Air Armament Center, Air Force Materiel Command, Weapon Effectiveness Branch, Modeling, Simulation and Analysis Division, Eglin Air Force Base, was Program Manager for BAM, the Joint Warfare Analysis Center for the Collateral Damage Estimate Tool, and the Air Force Research Laboratory. This work was funded by Headquarters, U.S. Army Corps of Engineers.

This report was prepared by Speler T. Montgomery and Dr. Richard C. Dove, Survivability Engineering Branch (SEB), Geosciences and Structures Division (GSD), Geotechnical and Structures Laboratory (GSL), U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, MS, under the general supervision of Pamela G. Kinnebrew, Chief, SEB, Dr. Robert L. Hall, Chief, GSD, Dr. William Grogan, Deputy Director, GSL, and Dr. David W. Pittman, Director, GSL. Technical Supervision was provided by Dr. Reed Mosher, Technical Director for Survivability and Protective Structures, and Toney K. Cummins, Manager, Work Package 256, PATCACE.

COL James R. Rowan was Commander and Executive Director of ERDC. Dr. James R. Houston was Director.

Figure A3. Preface sample showing content requirements and general writing style.

Figure A4 shows a sample notation list. This section, which appears after the table of unit conversion factors, defines scientific notations, mathematical symbols, and purely technical terms used in the report. The notation list is optional, but is recommended for indexing 10 or more terms. The list may be included for fewer terms if the author considers it helpful to the reader. It should include only *technical* terms; common acronyms and abbreviations should be spelled out on first reference in text.

Notation

β_{cr} critical compaction coefficient, defined as the compaction at which broken fragments lock up and particle rearrangement ceases

γ, γ_{cr} compaction angle and critical compaction angle that defines the zone of compacted material around a cone penetrometer

$\delta_{\perp,r}$ microstructural element deflection at failure

θ cone penetrometer half-angle

ρ material density in the compaction zone during compaction

ρ_0 initial density of the granular material

ϕ angle of internal friction for microstructural elements used to define the Mohr-Coulomb failure criteria

2-ADNT   2-amino-4,6-dinitrotoluene

2,4-DNT   2,4-dinitrotoluene

ACN   acetonitrile

GC-ECD   gas chromatography-electron capture detection

HMX   1,3,5,7-hexahydro-1,3,5,7-trinitro-1,3,5,7-tetrazocine

NG   nitroglycerin

RDX   1,3,5-hexahydro-1,3,5-trinitro-1,3,5-triazine

TNT   2,4,6-trinitrotoluene

UXO   unexploded ordnance

Figure A4. Sample notation list.

Appendix B: Authorized Distribution Statements

A distribution statement, selected from the seven primary distribution statements required by Department of Defense Directive (DoDD) 5230.24 (DoD 1987), shall be indicated on the back of ERDC Form 7-E (see Appendix C, Figure C2). The selected statement shall be printed on the cover, title page, and report documentation page of every ERDC technical publication. Only reports carrying Statement A may be posted to the World Wide Web with unrestricted access. Neither Statements A nor X shall be used on classified documents. The distribution statements, and authorized justifications for their application, are listed below. Consult DoDD 5230.24 for a complete explanation of the justifications.

Statement A: *Approved for public release; distribution is unlimited.*

Statement B: *Distribution authorized to U.S. Government Agencies only; (*fill in reason*); (*date*). Other requests for this document shall be referred to (*insert controlling DoD office*).*

- Foreign Government Information
- Proprietary Information
- Critical Technology
- Test and Evaluation
- Contractor Performance Evaluation
- Premature Dissemination
- Administrative or Operational Use
- Software Documentation
- Specific Authority (identification of valid documented authority)

Statement C: *Distribution authorized to U.S. Government Agencies and their contractors; (*fill in reason*); (*date*). Other requests for this document shall be referred to (*insert controlling DoD office*).*

- Foreign Government Information
- Critical Technology
- Software Documentation
- Administrative or Operational Use
- Specific Authority (identification of valid documented authority)

Statement D: *Distribution authorized to the Department of Defense and U.S. DoD contractors only; (*fill in reason*); (*date*). Other requests shall be referred to (*insert controlling DoD office*).*

- Foreign Government Information
- Administrative or Operational Use
- Software Documentation
- Critical Technology
- Specific Authority (identification of valid documented authority)

Statement E: *Distribution authorized to DoD Components only; (*fill in reason*); (*date*). Other requests shall be referred to (*insert controlling DoD office*).*

- Direct Military Support
- Foreign Government Information
- Proprietary Information
- Premature Dissemination
- Test and Evaluation
- Software Documentation
- Contractor Performance Evaluation
- Critical Technology
- Administrative or Operational Use
- Specific Authority (identification of valid documented authority)

Statement F: *Further dissemination only as directed by (*insert controlling DoD office*) (*date*) or higher DoD authority.*

Statement X: *Distribution authorized to U.S. Government Agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance with regulations implementing 10 U.S.C. 140c; (*date*). Controlling DoD office is (*insert controlling DoD office*).*

Figures A1 and A2 (Appendix A) show where distribution statements are positioned on report covers and the title pages.

A distribution statement remains in effect until it is changed or removed by the controlling DoD office. When notified by the controlling DoD office that distribution is no longer restricted, the ERDC Library will notify primary distribution recipients and authorized document handling facilities that Statement A should be applied.

Appendix C: Support and Routing Forms

Figure C1 illustrates the preferred cover letter and form to be used by ERDC authors and contractors when requesting permission to reproduce copyrighted material in an ERDC technical publication.

DEPARTMENT OF THE ARMY
ENGINEER RESEARCH AND DEVELOPMENT CENTER, CORPS OF ENGINEERS
LABORATORY NAME
LABORATORY P.O. BOX
CITY, ST ZIP+FOUR

REPLY TO
ATTENTION OF

February 13, 2006

Name of Branch
Branch

Addressee Name
Company Name
P.O. Box or Street Number
City, State ZIP

Dear Intellectual Property Manager:

This office is preparing a technical publication to be issued for Government purposes by the Specific ERDC Laboratory, U.S. Army Engineer Research and Development Center. This publication, entitled *Title of Report*, is a *Report Series Name* of approximately *NN* pages. It will be distributed principally to offices within the Army, the Department of Defense, and U.S. Federal, state, or local government agencies with an interest in the topic.

We wish to reproduce a limited amount of information for which your organization owns the copyright. The item/items we wish to include is/are specified on the enclosed copyright permission form, and photocopy(ies) of the item/items is/are attached. We respectfully request your permission to use the material in this non-profit Government publication, royalty-free. Your copyrighted material will include credit in the form of "object reproduced with permission of" followed by the information you provide on the attached permission form.

The enclosed form states the specifics and the scope of the permission we request. We ask that you fill in the appropriate information for your organization's credit line and indicate your approval of our request with your signature. Please return the original copy of the form to us in the enclosed prepaid return envelope. Also, if possible, it would be most helpful if you could fax a copy of your approval to NNN-NNN-NNNN, addressed to my attention.

Thank you for your prompt attention to this request. If you have any questions, please contact me at ERDC author's phone and extension or e-mail First.M.Last @erdc.usace.army.mil.

Enclosures　　　　　　　　　　　　　　Sincerely,
As Stated

First M. Lastname
Title

Printed on ♲ Recycled Paper

Figure C1. Suggested content of request for permission to use copyrighted information (continued).

The various text strings appearing in red are prompts for the ERDC author and should be typed over with the applicable information. The author should change the text color to black after providing all information required on the letter and form. The author must provide PTTB a copy of this form, signed by the copyright owner, for all copyrighted items to be reproduced in the ERDC technical document.

ATTN: CEERD-ERDC author's office code/Name   ERDC Author's fax (fax)

PERMISSION FOR LIMITED USE OF COPYRIGHTED MATERIAL
For the U.S. Army Engineer Research and Development Center
Laboratory Name
Laboratory Mailing Address, State, ZIP

The copyright holder hereby grants permission to the Engineer Research and Development Center, U.S. Army Corps of Engineers, to reproduce in print and on the Web the following material, royalty-free, in a non-profit Government technical publication entitled *Title of Technical Report*.

Author(s)	Title of Copyrighted Volume	Vol, No., Date	Page No.	Fig. or Table No.
	Fill in all applicable rows and columns			
	Add or delete rows as necessary			

The copyright owner acknowledges that this royalty-free permission extends to any non-profit public release of the covered material, only within the context of the specified ERDC publication, that is required by Government publishing regulations or the Freedom of Information Act.

The copyright owner requests that the following information be included in the acknowledgment:

_____

_____

I affirm that I am authorized by the owner of the copyright to grant this permission to reprint.

_____
Signature, Copyright Owner or Authorized Agent

_____
Official Title, Position, or Authority (please print)

_____
Company Name (please print)

_____
Date

Figure C1 (concluded).

Figure C2 illustrates ERDC Form 7-E, which must accompany every draft technical document that is routed to PTTB for processing. The approving authority (Block 13) for each technical organization shall be designated by the responsible laboratory director.

Instructions to Publishing and Technology Transfer Branch

1. DOCUMENT TITLE:

2. DOCUMENT SERIES: ☐ TR ☐ SR ☐ MP ☐ CR ☐ OTHER

3. FORMAT AND STYLE: ☐ ERDC ☐ OTHER

4. POC:

5. PR&C/LABOR CODE:

6. SPECIAL INSTRUCTIONS:

7. LEVEL OF EDITING REQUIRED:

☐ **a. Substantive (Content) Editing**	☐ **b. Copy Editing**	☐ **c. Conformance Checking**
Editor will check for effective organization of contents and expression of ideas, conformance with format and style, agreement of data, correctness of grammar, and proper use of references.	Editor will check for logical overall organization of report (structural flaws will not be changed but will be pointed out to the author), conformance with format and style, correctness of grammar, and proper use of references.	EDITOR WILL NOT READ THE REPORT. Editor will check for proper cover, SF 298, preface, and table of contents. Limitations on number of printed copies apply. Report will not be posted to the Internet.

8. PUBLISHING:

a. Number of Draft Copies Required:	b. Number of Printed Copies Required:

9. JUSTIFICATION FOR PRINTING:

Only those publications with complex information, unique use and/or diverse audiences, such as "pocket-size" pamphlets used during field operations, "classroom training" materials, "handouts" at meetings and conferences, display and distribution to public audiences at parks and recreation facilities, and historical activities, may be printed in quantities beyond the minimum required for archival purposes.

10. JUSTIFICATION FOR COLOR PRINTING:

Army Regulation 25-30 requires that printing or copying in more than one color be done only when doing so provides a specific valuable contribution. The use of color requires a written justification; all printing and duplicating must be obtained through the Publishing and Technology Transfer Branch.

a. Use of Color Being Requested	b. Justification of Valuable Contribution
☐ No Color	☐ Maps/technical diagrams requiring clarity.
☐ Color printing of selected figures (specified below):	☐ Object identification (specify):
	☐ Cost savings achieved by use of color.
	☐ Other (specify):

11. NOTE: Author is responsible for ensuring copyright permissions have been obtained for all technical content reproduced from other sources.

12. DATE	**13. SIGNATURE OF APPROVING AUTHORITY**

ERDC Form 7-E, Jan 06   *Supersedes ERDC Form 7-E, Nov 99; CERL Form 196*   Proponent: CEERD-II-P

Figure C2. ERDC Form 7-E for report transmittal to PTTB (continued).

14. REQUIRED NOTICES
(Please check proper notice to use under DISTRIBUTION STATEMENT and DISPOSITION INSTRUCTIONS.)

DISTRIBUTION STATEMENT. Indicate which of the following statements (required by DoD Directive 5230.24 and Army Regulation 70-11) is to be put on front cover and SF 298 of report. If Statement B, C, D, or E is to be used, please indicate which of the reasons is to be cited.

☐ **Statement A:** Approved for public release; distribution is unlimited.

☐ **Statement B:** Distribution authorized to U.S. Government Agencies only; (fill in reason); (date). Other requests for this document shall be referred to (insert controlling DoD Office). _____

☐ Foreign Government Information   ☐ Proprietary Information   ☐ Critical Technology

☐ Test and Evaluation   ☐ Contractor Performance Evaluation   ☐ Premature Dissemination

☐ Administrative or Operational Use   ☐ Software Documentation   ☐ Specific Authority (identification of valid documented authority)

☐ **Statement C:** Distribution authorized to U.S. Government Agencies and their contractors; (fill in reason); (date). Other requests for this document shall be referred to (insert controlling DoD Office). _____

☐ Foreign Government Information   ☐ Critical Technology   ☐ Software Documentation

☐ Administrative or Operational Use   ☐ Specific Authority (identification of valid documented authority)

☐ **Statement D:** Distribution authorized to the Department of Defense and U.S. DoD contractors only; (fill in reason); (date). Other requests shall be referred to (insert controlling DoD Office). _____

☐ Foreign Government Information   ☐ Administrative or Operational Use   ☐ Software Documentation

☐ Critical Technology   ☐ Specific Authority (identification of valid documented authority)

☐ **Statement E:** Distribution authorized to DoD Components only; (fill in reason); (date). Other requests shall be referred to (insert controlling DoD Office). _____

☐ Direct Military Support   ☐ Foreign Government Information   ☐ Proprietary Information

☐ Premature Dissemination   ☐ Test and Evaluation   ☐ Software Documentation

☐ Contractor Performance Evaluation   ☐ Critical Technology   ☐ Administrative or Operational Use

☐ Specific Authority (identification of valid documented authority)

☐ **Statement F:** Further dissemination only as directed by (insert controlling DoD Office) _____ (date) or higher DoD authority.

☐ **Statement X:** Distribution authorized to U.S. Government Agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance with regulations implementing 10 U.S.C. 140c; (date). Controlling DoD Office is (insert controlling DoD Office). _____

DISPOSITION INSTRUCTIONS: Unless special instructions regarding the report's disposition are necessary, one of the following notices will be used.

Unclassified, unlimited reports:

☐ Destroy this report when no longer needed. Do not return it to the originator.

Reports marked with distribution statements B, C, D, E, F, or X:

☐ DESTRUCTION NOTICE – For classified documents, follow the procedures in DoD 5200-22-M, Industrial Security Manual, Section II-19, or DoD 5200.1-R, Information Security Program Regulation, Chapter IX. For unclassified, limited documents, destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Reverse of ERDC Form 7-E, Jan 06

Figure C2 (concluded).

Figure C3 shows ERDC Form 9, which is used to document laboratory approval to publish ERDC technical documents.

Publishing and Technology Transfer Branch **Publication Approval Form**				
1. Publication Title:				
2. Publication Number:		**3. ID Number:**		
4. Print (No. of copies):				
5. Distribution List (for printed copies):		**6. Listserver Notification List:**		
7. Laboratory Approval:				
Routing	**Name**	**CEERD–**	**Initials**	**Date**
Editor				
Author / POC				
Branch Chief				
Division Chief				
Technical Director				
Deputy Director				
Laboratory Director				

Placement on the Internet requires Laboratory Director's approval:

☐ Approved	☐ Not Approved	☐ Not Applicable	**Laboratory Director's Initials**
Editor			
Visual Information Specialist			
Chief, PTTB			
Visual Information Specialist			

8. The following items apply (if checked):
☐ a. This publication was not read by a P&TTB editor (and is not appropriate for unlimited Internet access).
☐ b. Laboratory should furnish:
　　☐ (1) Number of copies to be printed.
　　☐ (2) Distribution list.
　　☐ (3) Abstract (not to exceed 200 words).
　　☐ (4) Key words.
☐ c. The quality of photographs and illustrations in this report does not meet minimum standards and requires laboratory approval before the report can be published.
☐ d. Other comments:

ERDC Form 9, R Oct 05　　*Previous editions are obsolete.*　　Proponent: CEERD-II-P

Figure C3. ERDC Form 9 for publication approval.

1. REPORT DATE (DD-MM-YYYY) January 2006	2. REPORT TYPE Final report	3. DATES COVERED (From - To)

4. TITLE AND SUBTITLE

Guide for Preparing Technical Information Reports of the Engineer Research and Development Center

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Information Technology Laboratory, U.S. Army Engineer Research and Development Center, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199

8. PERFORMING ORGANIZATION REPORT NUMBER

ERDC/ITL SR-04-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

July 2004 version revised January 2006.

14. ABSTRACT

This Guide provides information necessary for authors to prepare and produce technical publications for the U.S. Army Engineer Research and Development Center (ERDC). This version of the Guide consolidates processes and procedures used at all ERDC sites. Technical information guidelines are based on ANSI/NISO Z39.18-2005, and the essential mechanics of professional writing, including language use, punctuation, and reference format, are based on *The Chicago Manual of Style*, 15th edition. The Guide also discusses items of specific relevance to preparing ERDC reports, including publishing workflow and preferred electronic file formats. The presentation formats prescribed by this Guide, such as fonts, point sizes, and page headers, were modified to facilitate Web-based publishing.

15. SUBJECT TERMS

ERDC
Report format

Style manual
Technical publications
U.S. Army Engineer Research and Development Center

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED		48	19b. TELEPHONE NUMBER (include area code)